



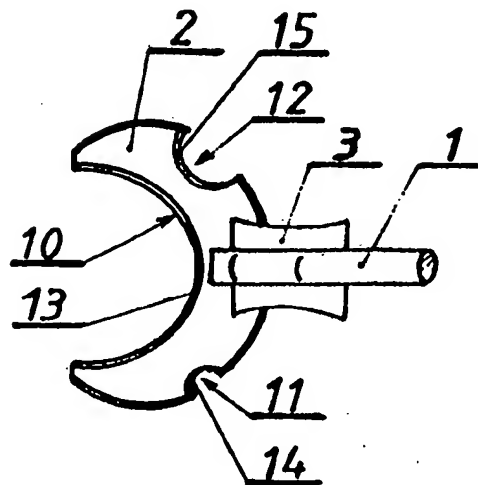
## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : B44D 3/00, B05C 21/00	A1	(11) International Publication Number: WO 98/49019 (43) International Publication Date: 5 November 1998 (05.11.98)
(21) International Application Number: PCT/PL97/00023 (22) International Filing Date: 29 September 1997 (29.09.97) (30) Priority Data: P.319675 25 April 1997 (25.04.97) PL (71)(72) Applicant and Inventor: BUJNOWICZ, Michał [PL/PL]; ul. Bracka 33 m.60, PL-95-200 Pabianice (PL). (74) Agent: FEDEROWICZ, Jadwiga; Al. Śmigłego-Rydza 29 m.11, PL-93-281 Łódź (PL).		(81) Designated States: CA, CN, CZ, HU, JP, NO, RU, SE, UA, US, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  Published With international search report. With amended claims.

(54) Title: DEVICE FOR CLEANING PAINT ROLLERS

## (57) Abstract

The device is used to clean paint rollers after use, with the aid of water. It has a paint scraping segment (2) fixed to a handle (1). The segment (2) takes the form of part of a ring, and its inner surface (10) is arc-shaped. The radius of the arc is adapted to the diameter of a roller. In addition, the surface (10) is chamfered (13) on both sides. The segment (2) is fixed to the handle (1) in a fixed or removable manner, for example by means of a screw. On the outer side of the segment (2) there are further arc-shaped recesses (11 and 12); the radii of these are adapted to the dimensions of painting devices having small oval cross sections. A cleaning brush (3), which is used to clean those elements of painters' equipment that are difficult to reach, is fixed to the handle (1) on the opposite side to that which carries the segment (2).



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## DEVICE FOR CLEANING PAINT ROLLERS

The object of the invention is a device to clean painting rollers from a paint.

Such rollers are a piece of equipment used to paint different surfaces.

Common devices used by painters are equipped with rotating rollers, whose coating on a stiff construction is made of textile fibres material which absorb liquids and are similar to wool-fur, pure wool or elastic artificial materials similar to sponges.

The roller is used to pick up a suitable quantity of a paint from a container and next to cover with this paint - by means of the roller rotation - surfaces intended to be painted.

After painting, not to let the paint to dry out, the rollers are directly cleaned in manual way by means of squeezing and twisting off the outer, paint absorbing coating under a stream of warm water. Due to a direct contact of a person with a paint and frequent application of cold water, the cleaning is unpleasant and toilsome process. Different kinds of open-work or solid plates with convexities are known, e.g. according to the patent application no P 311 199, the plates are assigned to scrap an excessive amount of paint to uniformly distribute a suitable quantity of a paint on the roller before painting process of an intended surface.

Using multiple rubbing of the roller on the scraping plate, it is possible to remove under the pressure only a small quantity of the paint into the container. However it hardly influences on the shortening of the manual cleaning process under the water stream.

The aim of the invention is to design a device which could facilitate the cleaning of the painting rollers from a paint to reach high efficiency of cleaning with limited water waste. According to the invention, a device has been designed, which contains a paint scraping segment with an arc-shaped surface from the inner side, adjusted to the roller's diameter, fixed to the handle. Additionally, both sides of the arc-shaped surfaces are chamfered.

The scraping segment is fixed to the handle in stiff or in separable way. From the outer side it also has the arc-shaped recesses, adjusted to the cleaning elements of the painting devices with smaller oval cross-sections.

A cleaning brush is fixed to the handle from the other side of the segment.

The object of the invention is shown as an exemplary model in figures, where: fig. 1 represents

the device in a partial, longitudinal section, fig. 2 - magnified lower part of the device in separated position, in a vertical section, fig. 3 - lower part of the device in top view, fig. 4 - scraping segment of the device in top view, fig. 5 - the device with the painting roller and the cleaning device in working position, in a perspective top view.

The device consists of exchangeable scraping segments 2 and brush 3 fixed to the handle 1.

The handle 1 is produced of steel rod of oval cross-section. In the upper part of the handle, on its straight or bent part there is placed a grip 4. In the lower part of the handle, the bent tip is ended with quadrangular pivot 5, in which, on the side there is a seat 6 for the screw 7 which fix the segment. There is a threaded hole 8 for screw 9 used to fix the brush 3 on the other side of the segment near to the bent area in the handle.

The segments 2 have on the inner side arc-shaped surfaces 10, adjusted to a diameter of the painting roller.

Additionally on the outer side, they have arc-shaped recesses 11 and 12 adjusted to clean the smaller elements with oval cross-section of the painting devices.

Particularly, the recess 11 is assigned to clean the handle rod, and recess 12 to clean a small roller, frequently used by professional painters.

The arc-shaped inner surfaces have on both sides chamfers 13 of the front edges, facilitating guiding of the device and removing of a paint during the roller cleaning process due to decreasing of the friction. The front edges of the recesses 11 and 12 also have the chamfers 14 and 15.

In the middle part, the segment 2 has a seat 16 of quadrangular cross-section, adjusted to shape of a handle pivot. The best vertical bending angle for the seat is from 10° to 20°. It assures proper position of the handle 1 with relation to the segment and facilitates manipulation of the device during the roller cleaning process. From the side, in the middle of the seat 16, there is a threaded hole 17 connected to the seat, for the screw 7, which fix the segment to the handle.

The segment 2 is a part of a ring, or profitably semi-ring and it is made of plastic or metal.

The segment can be fixed to the handle in separable way by means of a simple screw connection, or other known connection solutions.

In extreme case, it can be fixed in stiff way.

In the presented example the handle and the segment are connected in separable way. Several exchangeable segments, adjusted to the diameters of painting rollers frequently used by professional painters are included into the set of the device.

In order to obtain high efficiency of the roller cleaning, the scraping segment with inner diameter should be more or less equal to the outer diameter of the stiff part of the roller, where in most cases there is a coating made of textile fibres material which absorb liquids.

Holding the grip of the device with painting roller in one hand, placing the roller on scraping plate in a container with paint and holding the grip 4 in the other hand, the segment of the device is put on a soft coating of the roller.

Performing the plane movements along the roller, successively on its entire circumference and simultaneously exerting the pressure, the notable amount of paint is pulled down from the front surfaces by means of the segment, back into a container. Next, a precise cleaning of the roller is performed by a fast, hand made and back-and-forward movements along the roller, as it is shown in fig. 5. It can be done for example in a wash-bowl, under the steam of cold water. The side surfaces of the roller are cleaned by means of the brush 3, placed on the opposite side of the scraping segment, the handle rod is cleaned by means of putting it in smaller recess 11 of the segment. Usually, a brush is used to clean the elements of painters equipment which are hard to reach.

The device, according to the invention, eliminates usage of warm water during the cleaning process and simultaneously decrease usage of cold water with comparison to the traditional method which is based on manual cleaning by means of squeezing and twisting off the outer, paint absorbing coating under a steam of warm and/or cold water.

## Claims

1. A device used to clean the painting rollers from a paint is characterised by a paint scraping segment ( 2 ), which surface is arc-shaped from the inner side ( 10 ), and by fixing to the handle ( 1 ).

2. The device, according to the claim 1 is characterised by the scraping segment ( 2 ) is fixed to the handle ( 1 ) in stiff or in separable way and by having from the outer side arc-shaped recesses ( 11 and 12 ), adjusted to the cleaning elements of the painting devices with smaller oval cross-sections.

3. The device, according to the claim 1 or 2 is characterised by the cleaning brush ( 3 ) fixed to the handle ( 1 ), from the other side of segment ( 2 ) location.

4. The device, according to the claim 1 is characterised by the arc-shaped surface ( 10 ) of the segment and by having chamfers ( 13 ) from both sides.

**AMENDED CLAIMS**

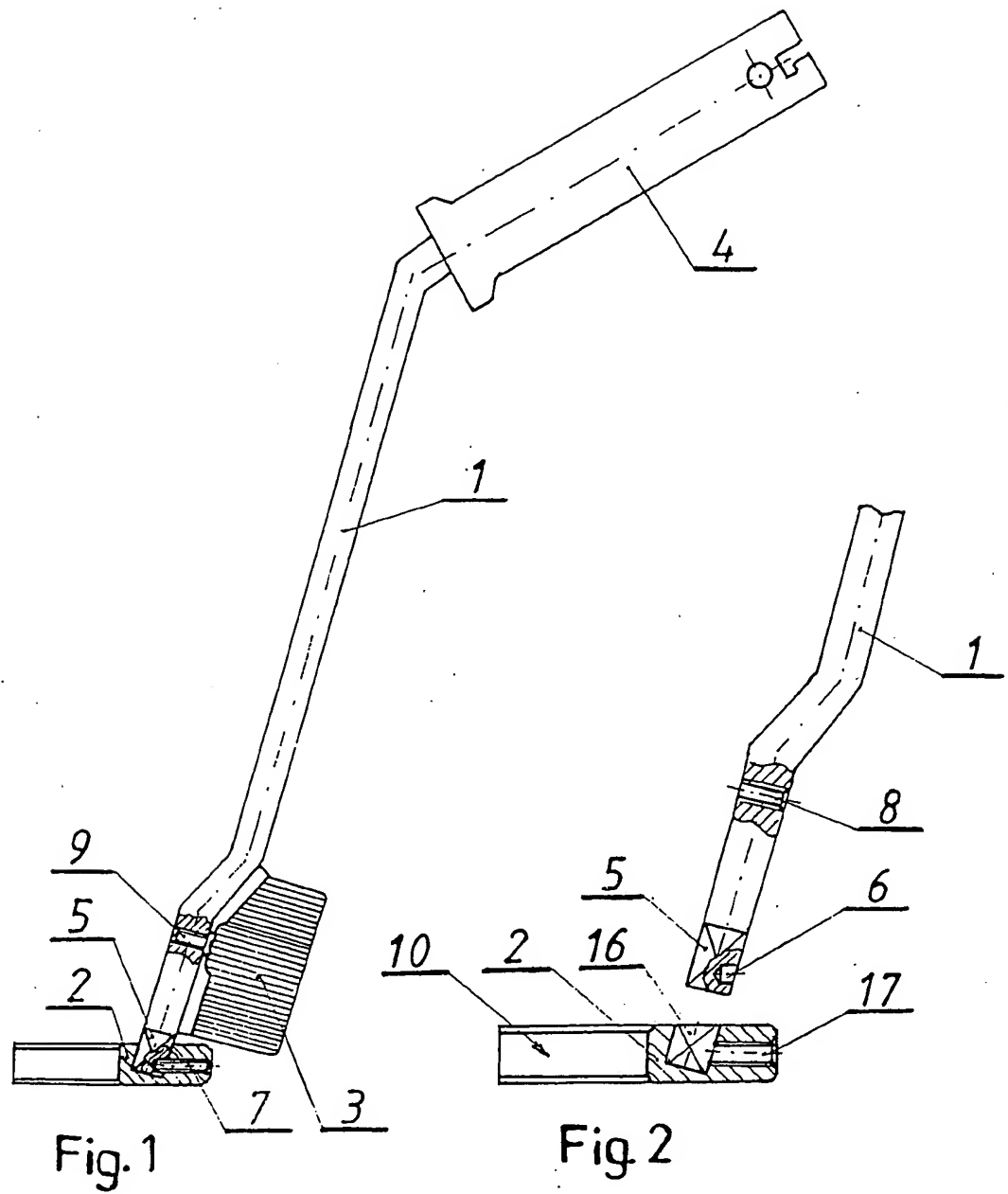
[received by the International Bureau on 16 April 1998 (16.04.98); -  
original claim 1 amended; remaining claims unchanged (1 page)]

1. A device used to clean the painting rollers from a paint is characterised by a paint it crosswise scraping segment ( 2 ), which surface is arc-shaped from the inner side ( 10 ), and by fixing to the handle ( 1 ).

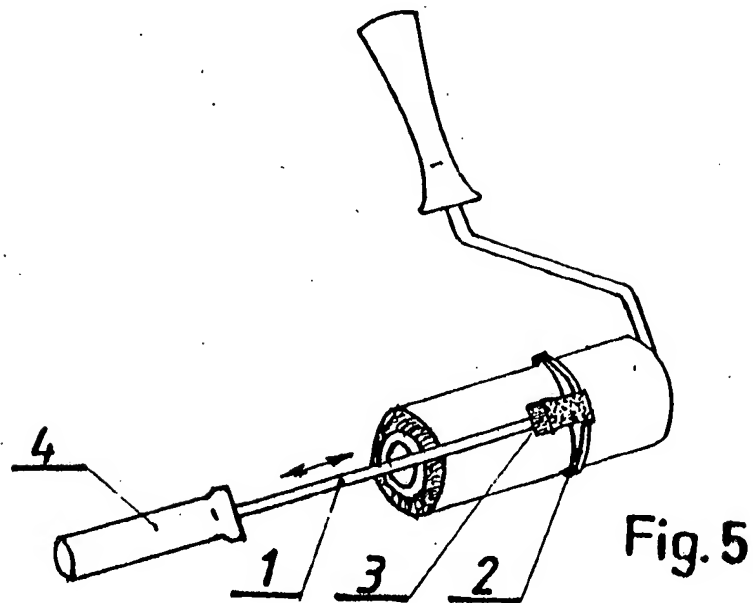
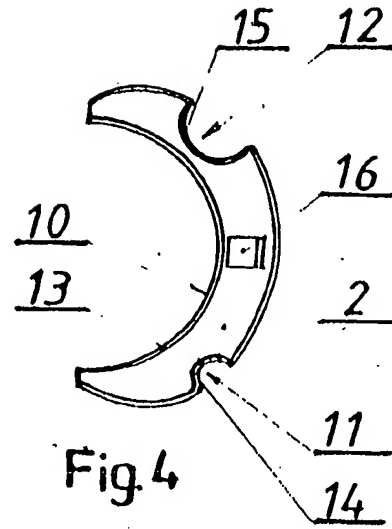
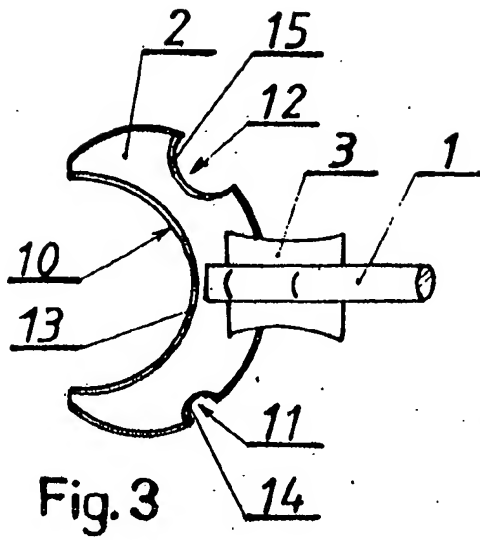
2. The device, according to the claim 1 is characterised by the scraping segment ( 2 ) is fixed to the handle ( 1 ) in stiff or in separable way and by having from the outer side arc-shaped recesses ( 11 and 12 ), adjusted to the cleaning elements of the painting devices with smaller oval cross-sections.

3. The device, according to the claim 1 or 2 is characterised by the cleaning brush ( 3 ) fixed to the handle ( 1 ), from the other side of segment ( 2 ) location.

4. The device, according to the claim 1 is characterised by the arc-shaped surface ( 10 ) of the segment and by having chamfers ( 13 ) from both sides.







# INTERNATIONAL SEARCH REPORT

International Application No

PCT/PL 97/00023

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 B44D3/00 B05C21/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 B44D B05C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 93 00 198 U (W. NAGY) 18 March 1993 see page 2, line 5 - page 7, line 3 ---	1,2
X	GB 2 270 464 A (L G HARRIS & CO LIMITED) 16 March 1994 see page 1, paragraph 4 - page 5, paragraph 3 ---	1
X	FR 2 147 406 A (MOULINAGE ET RETORDERIE DE CHAVANOZ) 9 March 1973 see page 1, line 27 - page 4, line 24 ---	1,4
X	US 5 546 625 A (E. H. MEALEY SR) 20 August 1996 see column 3, line 20 - column 4, line 32 ---	1
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

15 January 1998

Date of mailing of the international search report

28/01/1998

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>DE 27 21 212 A (D. HLAWATSCH) 16 November 1978  see page 5, paragraph 3 - page 11, paragraph 3  -----</p>	1,2

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/PL 97/00023

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 9300198 U	18-03-93	NONE	
GB 2270464 A	16-03-94	NONE	
FR 2147406 A	09-03-73	NONE	
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